RADIO

FM for Local Schools

➤ SCHOOL and college use of FM radio transmitters, in so-called educational stations for which the Federal Communications Commission has set aside special wavelengths, gives promise of rapid development with new, inexpensive equipment now available.

FM stands for frequency modulation, the type of static-free radio transmission coming widely into use. It is "line-of-sight" transmission, which does not follow the curvature of the earth and is available ordinarily only to receivers within some 50 miles of the sending station. The new transmitters proposed for use in the educational program would have power enough to carry only from some five to 15 miles.

One of these new FM transmitters is a General Electric product. It furnishes ten watts of power in the 88-108 megacycle frequency range, where its signals may be received on standard FM receivers. Its coverage is from five to 10 miles. It is suitable for church and community programs as well as for educational stations.

Another transmitter is a product of Radio Engineering Laboratories, Long Island City, N. Y., and is called a Serrasoid Modulator. Its first showing was at a recent FM convention in Chicago. It is described as holding promise of bringing FM programs within reach of many communities and groups now denied radio facilities because of high cost.

This transmitter is said to have high-fidelity on low power. Its local area can be well defined and scores of local stations could therefore use the same wavelength over the country without interference. The new system thus reinforces FM's potentiality of providing America with thousands of radio stations compared with the limited number of overlapping and expensive AM stations now in use. AM, amplitude modulation, is the type of radio transmission employed in the familiar long-used radio systems.

Science News Letter, November 27, 1948

ENGINEERING

Weather Stations Use Wind-Driven Generators

➤ NEXT THERE will be an automatic weather-reporting station needing no attention for a year at a time. An apparatus that utilizes the wind for power is under development in the Army Signal Corps laboratory, Fort Monmouth, N. J. It is designed for use in out-of-the-way places, such as north of the Arctic Circle.

Automatic weather stations are now in use in various parts of the world. They send out by radio signals information on temperature, humidity, wind velocity and direction, and other data hourly or at other intervals. The power to create the energy for their radio signals is provided by a gasoline-driven generator which is started and stopped by a clock. Electrical energy keeps the clock wound. These stations need a new supply of gasoline about once a month. Once they utilize wind-power, little attention will be needed.

The wind in these new weather-reporting stations will drive an electrical generator to charge a bank of storage batteries. The batteries, in turn, will operate the radio and other equipment. A wind of seven miles per hour will generate electricity in the type of equipment to be used, and one of 24 miles per hour will produce the generator's rated output of 2.5 kilowatts. An automatic regulator will prevent over-charging of batteries.

The windmill is not the familiar long-armed type, but a three-bladed propeller. It will be mounted on a tower, the height of which will depend upon the intensity of winds at any particular installation. The wind propeller was developed by scientists of the Signal Corps and the Wind Turbine Company of West Chester, Pa.

Science News Letter, November 27, 1948

ENTOMOLOGY

DDT-Resistant Fly Strains Take 50 Times Normal Dose

➤ DDT, used freely to kill off flies, provokingly continues to act as an agent of quasi-natural selection, producing strains that represent the survival of the toughest. Dr. James R. Douglas, entomologist at the University of California's College of Agriculture in Davis, Calif., reports finding flies that require 50 times the normal dose of DDT to kill them. There was nothing wrong with the DDT, for it readily killed non-resistant strains of laboratory-reared flies.

Science News Letter, November 27, 1948